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ABSTRACT

This evaluation of compensatory education programs in the Philadelphia (Pennsylvania) Public Schools, funded under Chapter 1 of the Education Consolidation and Improvement Act of 1981, uses an indicator-based multiple-year approach to chart changes between 1985-86 and 1988-89. An educational indicator is a number that provides useful information concerning the characteristics and vitality of an educational system. Indicators were developed to measure services, student participation, and student achievement gains, and to compare the achievement gains of Chapter 1 participants with those of regular students. The following findings are included: (1) variations in the number of services provided varied slightly from year to year, based on system enrollment and program reorganization; (2) most participants were likely to receive consistent service across the school year; (3) gains in mathematics achievement exceeded gains in reading achievement; (4) achievement gains in the lower grades tended to be better than achievement gains in the upper grades; and (5) the "achievement gap" between Chapter 1 participants and regular students appears to increase with age. Statistical data are presented in 2 tables and 17 graphs. (FMW)

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The School District of Philadelphia

ED330756

Chapter 1 Snapshots

An Indicator Based Evaluation

1985 - 1989

Report No. 9002

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TABLE OF CONTENTS

Design of Evaluation	1
Section 1: Educational Indicators	3
Section 2: Chapter 1 in the School District of Philadelphia	7
Section 3: Achievement Patterns	11
Section 4: Success in the Regular Program	22

DESIGN OF THE EVALUATION

The major purpose of the evaluation was to examine significant aspects of the Chapter 1 program and its interaction with the general fund program. An indicator-based multiple year approach was used in order to chart change over time.

The specific tasks of the evaluation were:

- To provide information regarding the potential uses of educational indicators for monitoring and guiding the improvement of the quality of schooling.
- To define multiple indicators that can be understood by a broad array of individuals.
- To provide descriptive information regarding the Chapter 1 program.
- To document program trends and outcomes that extend more than a single year in duration.

Inquiry was organized in four sections, each having a unique set of questions as its focus:

SECTION 1: EDUCATIONAL INDICATORS

What is an educational indicator?

What are the characteristics of indicators?

How may indicators be used?

Why was Chapter 1 selected as a focal point for this Inquiry?

SECTION 2: Chapter 1 in the School District of Philadelphia

What indicators are used to describe Chapter 1 services and students?

How many services are provided by Chapter 1 annually?

How are individual Chapter 1 services distributed by basic skills areas?

How mobile is the Chapter 1 population in comparison to the school district as a whole?

SECTION 3: ACHIEVEMENT PATTERNS

How is student achievement measured in Chapter 1?

What were the citywide Chapter 1 NCE Achievement patterns in Reading and Mathematics from 1985-86 to 1988-89.

What were the Chapter 1 NCE gain achievement patterns in Grades 1-8 for Reading from 1985-86 to 1988-89?

What were the Chapter 1 NCE gain achievement patterns in Grades 9-12 for Reading from 1985-86 to 1988-89?

What were the Chapter 1 NCE gain achievement patterns in Grades 1-8 for Mathematics from 1985-86 to 1988-89?

What were the Chapter 1 NCE gain achievement trends in Grades 9-12 for Mathematics from 1985-86 to 1988-89?

What were the Citywide Chapter 1 percent of success achievement patterns in Reading and Mathematics from 1985-86 to 1988-89?

What were the Chapter 1 percent of success achievement patterns in Grades 1-8 for Reading from 1985-86 to 1988-89?

What were the Chapter 1 percent of success achievement patterns in Grades 9-12 for Reading from 1985-86 to 1988-89?

What were the Chapter 1 percent of success achievement patterns in Grades 9-12 for Mathematics from 1985-86 to 1988-89?

What conclusions may be drawn from the achievement indicators?

SECTION 4: SUCCESS IN THE REGULAR PROGRAM

How can one determine whether the achievement of Chapter 1 students is up to standards over time?

What is the baseline achievement gap in reading?

What is the baseline achievement gap in mathematics?

What is the baseline achievement gap in Science?

What is the baseline achievement gap in Social Studies?

How do Chapter 1 and non-Chapter 1 students compare with respect to age-grade placement?

What are the common patterns of exiting and entering for program participants?

What conclusions and recommendations emerge from this study?

What Is an Educational Indicator?

An educational indicator is a number which provides useful information concerning the chacteristics and vitality of an educational system. It is frequently described in one or more of the following ways:

* a statistic about an educational system
* points out or directs attention to something
* information concerning current status
* suggest whether progress or change is occuring
* warn of potential problems

Sources:

Oakes,J. 1986. Educational Indicators: A guide for Policy Makers. Santa Monica, CA: Center for Policy Research, The Rand Corporation.

National Center for education Statistics, 1985. Indicators of Educational Status and Trends. Washington, DC. Department of Education.

What Are the Characteristics of Indicators?

In order to provide useful information about an educational system, indicators must have cerntain characteristics. The most important of these characteristics are listed below. An educational indicator:

* consists of statistically valid and reliable information
* provides a barometer or benchmark for measuring progress
* measures common features of schooling
* easily understood by a broad audience
* generally accepted as important
* describes conditions linked to desired outcomes
* describes enduring features
* provides problem oriented information
* provides policy relevant information

Sources:

Oakes, J. 1986. Educational Indicators: A guide for Policy Makers. Santa Monica, CA: Center for Policy Research, The Rand Corporation.

National Center for education Statistics, 1985. Indicators of Educational Status and Trends. Washington, DC. Department of Education.

How May Indicators Be Used?

Indicators may be used for:

* determining current status, identify needs and focusing attention
* establishing trends and monitoring change over time
* predicting future performance
* suggesting possible links between conditions and changes
* highlighting strengths and areas to be strengthened
* focusing attention on policies and their impact

Why was Chapter 1 Selected as a Focal Point for this Inquiry?

* Chapter 1 represent a substantial resource with a $60 million annual budget

* Provides basic skills and supportive services for 70,000 students in 162 schools in Philadelphia

* The Program has been recently reorganized

* Unless Chapter 1 students improve, Districtwide improvement will be severely limited

What Indicators are used to Describe Chapter 1 Services and Students?

This section describes the Chapter 1 services and the students it serves. The educational indicators used are:

The Annual Service Count

Service Area Counts

Pupil Stability Index

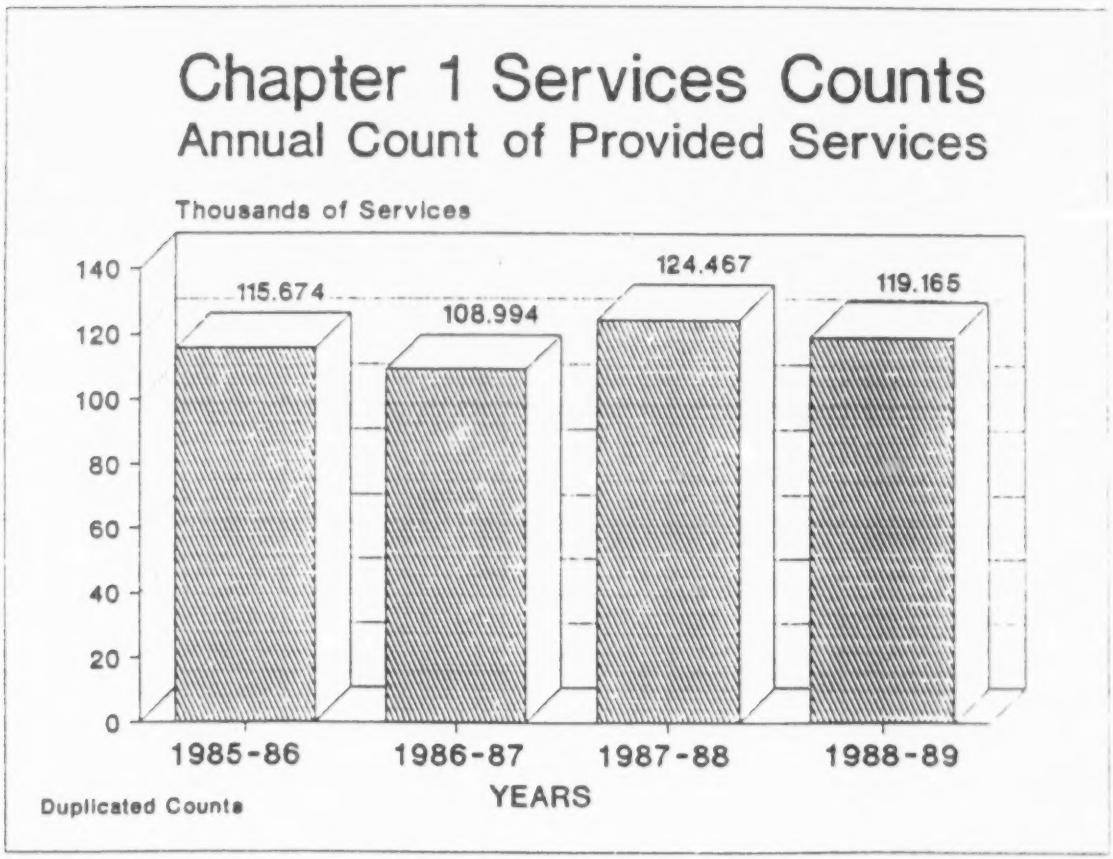
Age-grade Appropriate

How Many Services Are Provided by Chapter 1 Annually?

Name of Indicator: Annual Service Count

Description of Indicator:

This is a duplicated count of the number of students reported served in each project. Students who receive service in more than one project are counted in each project.



Comments:

* Across Chapter 1 more than 100,000 services are provided annually

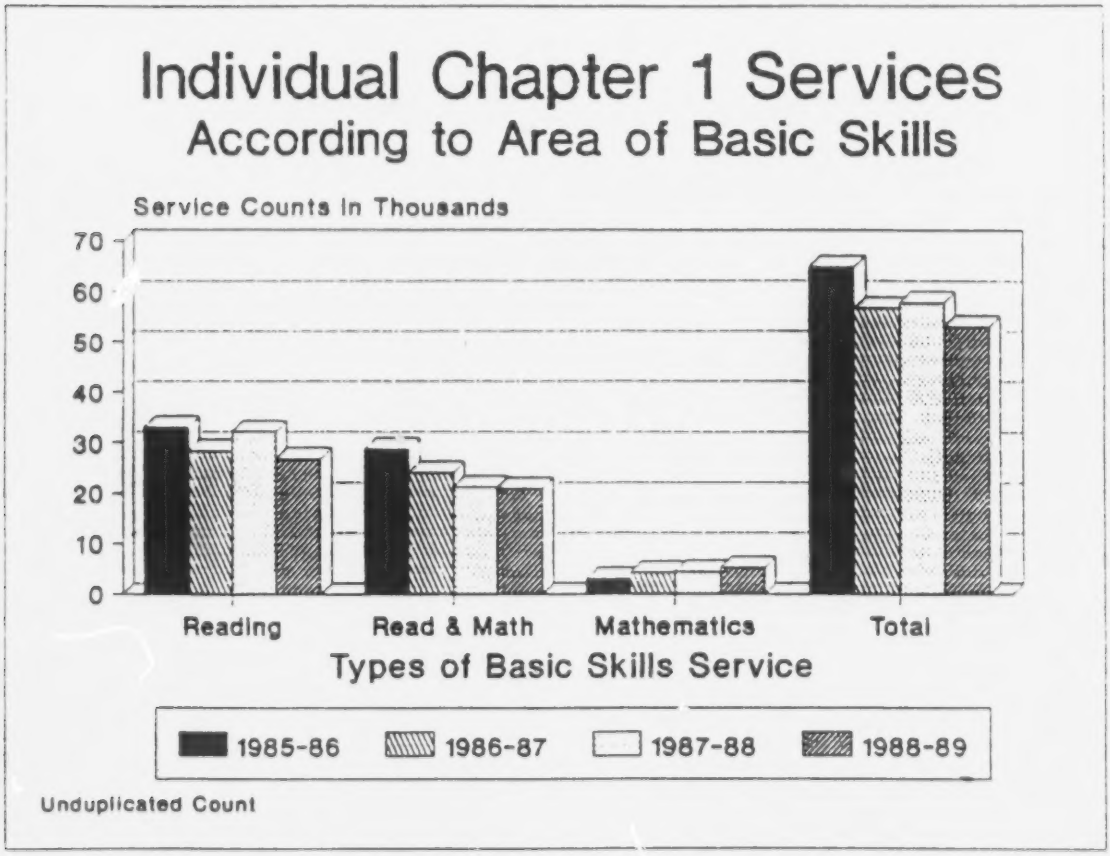
* Variations between years appears to be slight and most likely related to system enrollment and program reorganization

How are Individual Chapter 1 Services Distributed by Basic Skills Areas?

Name of Indicator: Service Area Counts

Description of Indicator:

This is an unduplicated count of individual students served by Chapter 1 reading services, mathematics services and both reading and mathematics.



Comment:

* Reading only is the most common service, followed by a combination of reading and mathematics.

* Mathematics as a sole service has increased slightly between 1985/86 -1988/89. This may be due to the increased emphasis on Schoolwide projects.

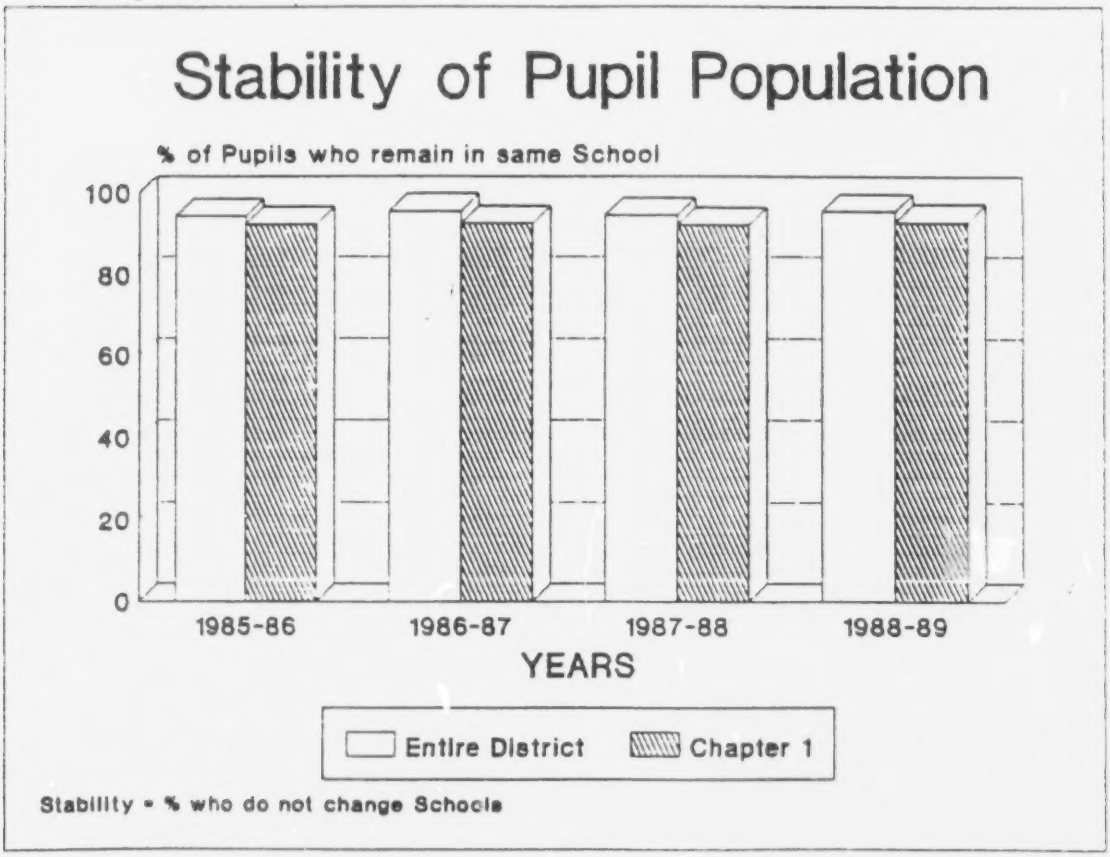
* The total number of individual services have decreased. This is most likly due to decreases in enrollment and concentration of Chapter 1 resources.

How Mobile is the Chapter 1 Population in Comparison to the School District as a Whole?

Name of Indicator: Pupil Stability Index

Description of Indicator:

The Stability Index is the proportion of students who do not change schools during the school year. It presents a picture of the proportion of students who start and remain at the same school for the year.



Comment:

* Students receiving Chapter 1 services were nearly as stable as the larger school district population.

* Most students served by Chapter 1 are likle to receive consistent service across the school year providing that they attend regularly.

* Of the students who attend more than one school per year, Chapter 1 pupils exceed the district population.

How is Student Achievement Measured for Chapter 1?

* When Chapter 1 evaluation systems were first proposed by the federal government, an evaluation model was prescribed as well This model assumes that, in the absence of an educational intervention beyond the regular school program, chidren will maintain their Normal Curve Equivalent scores (NCEs are normalized National Percentile Ranks) from year to year.

* The evidence of a Chapter 1 effect above and beyond the effect of the regular school program is, by definition, a pretest to posttest improvement in the NCE.

* There are two achievement indicators reported on a grade by grade basis, and for the Chapter 1 served group as a whole:

  Percentage of Success - The percentage of students who increased their NCEs from pretest to posttest.

  Mean NCE Gain - The pretest to posttest improvement in the NCE of the average score for each group.

Comment:

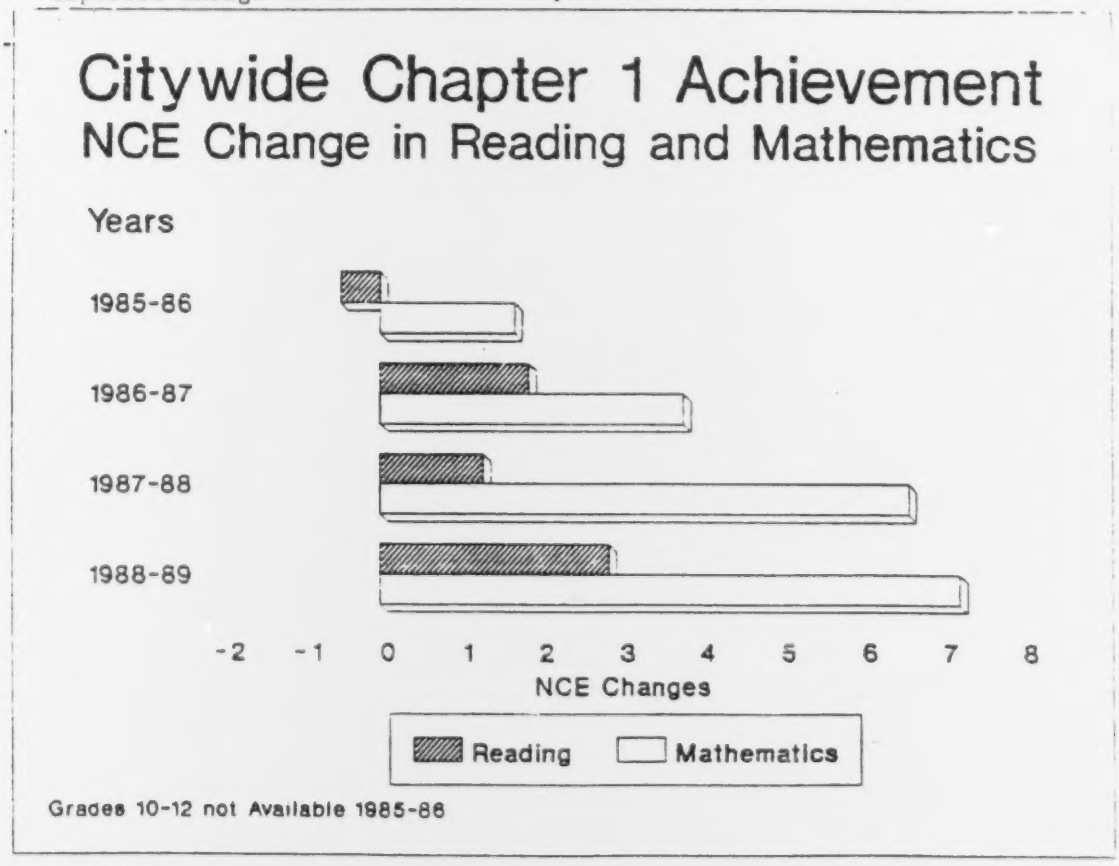
In summary, this model seeks to document an effect which is over and above what one would expect based on historical performance. While this might be true under ideal conditions, the reality of field evaluation prevents attributing the results to Chapter 1 alone (i.e., causal effect). Thus, overall School District improvement and/or its interaction with supplementary programs may also serve to explain achievement.

What were the Citywide Chapter 1 NCE Achievement Patterns in Reading and Mathematics from 1985-86 to 1988-89?

Name of Indicator: NCE Gain

Description of Indicator:

The NCE gain is the difference between the posttest score and the pretest score. It compares the change of the local Chapter 1 students with the expected change of the national sample used to norm the test.



Comment:

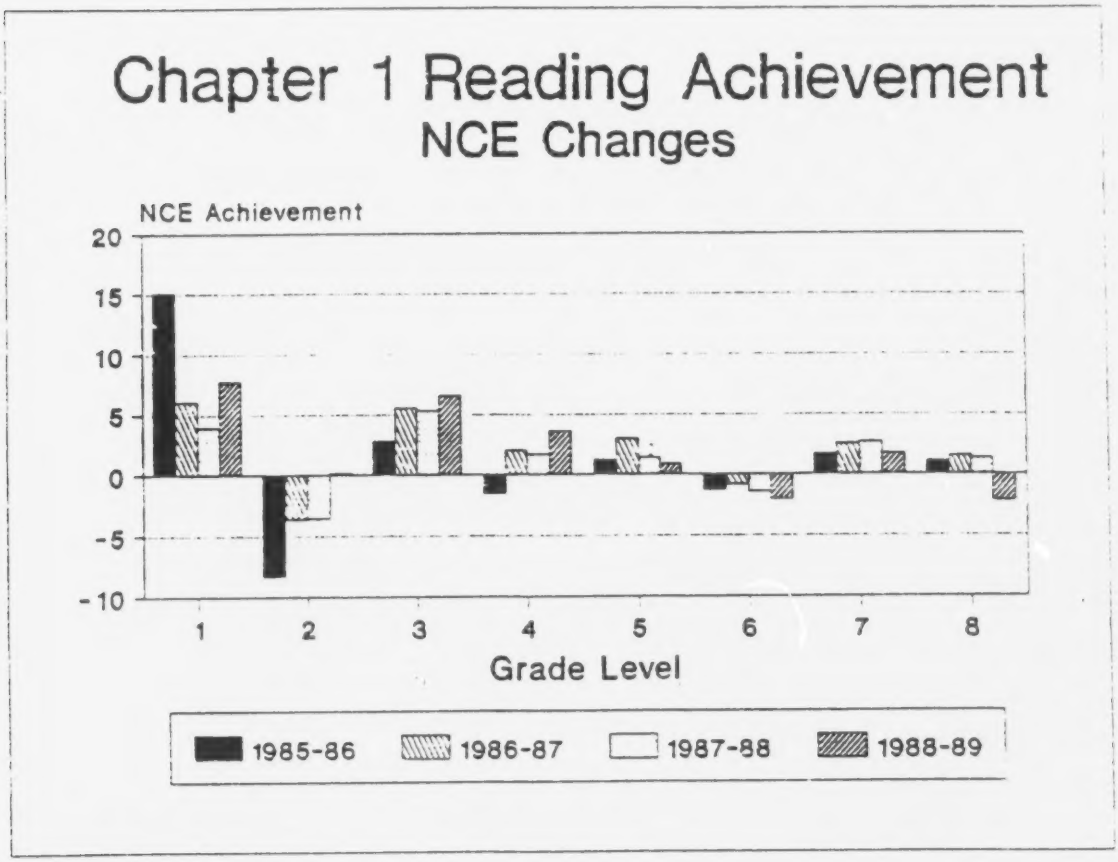
* The Citywide NCE reading gain went from -0.5 to +2.87 during a four year period.

* The Citywide NCE Mathematics gain went from +2.3 to +7.2 during a four year period.

* The Citywide NCE gain was greater for mathematics than for reading.

* The Citywide patterns for NCE gain in reading and mathematics were positve between 1985-86 and 1988-89.

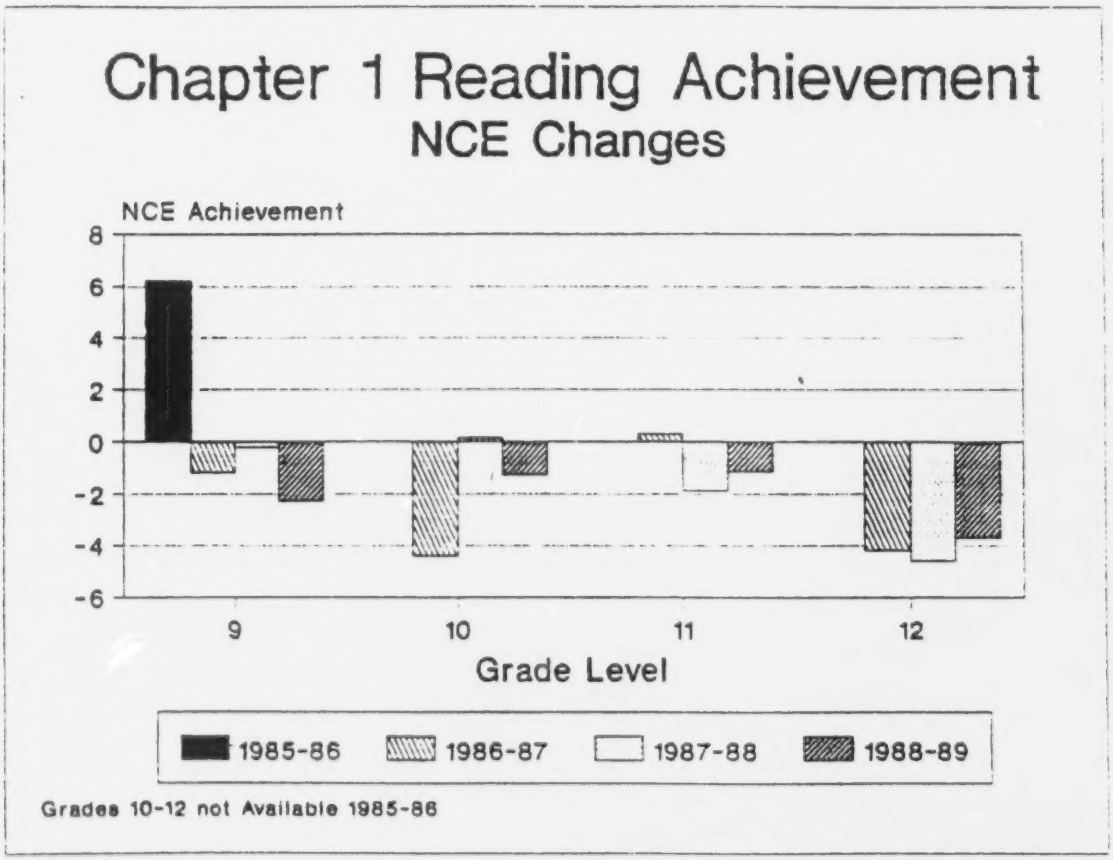
What were the Chapter 1 NCE gain achievement Patterns in Grades 1-8 for Reading from 1985-86 to 1988-89?



* Grades 1,3,4,5,7 and 8 tend to show NCE gains

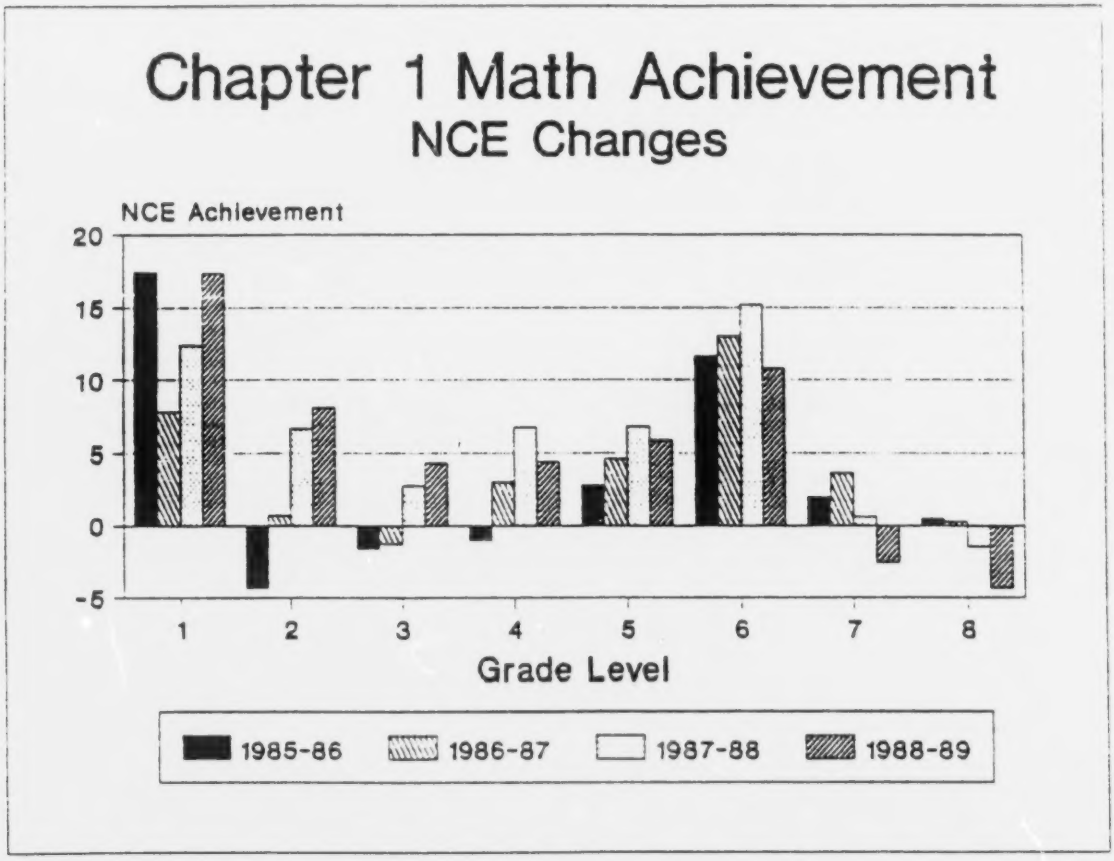
* Grades 2 and 6 have shown consistently negative NCE changes

What were the Chapter 1 NCE Gain Achievement Patterns in Grades 9-12 for Reading from 1985-86 to 1988-89?



* Grades 9-12 show consistently negative NCE changes

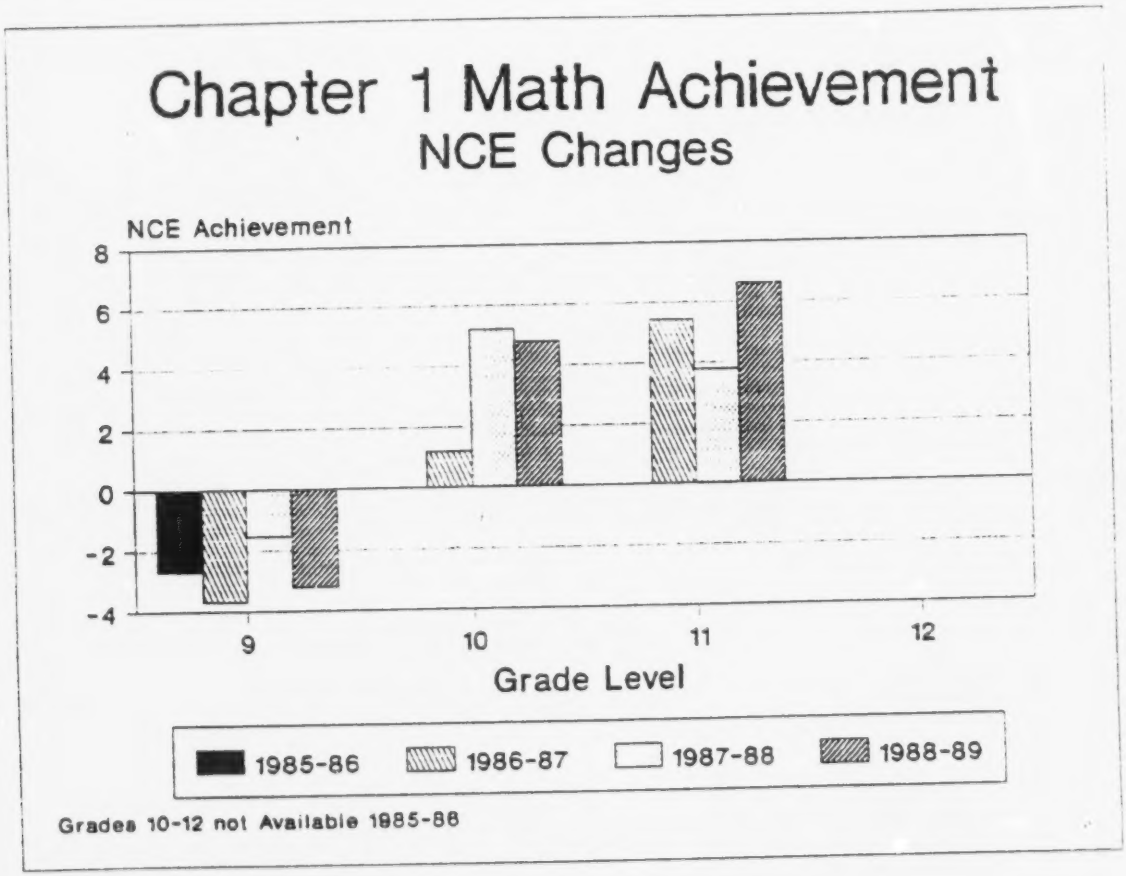
What were the Chapter 1 NCE gain achievement Patterns in Grades 1-8 for Mathematics from 1985-86 to 1988-89?



* Grades 1-6 tend to show NCE Gains

* Grades 7 and 8 show a mixed pattern with negative NCE change in recent cycles.

What were the Chapter 1 NCE gain achievement Patterns in Grades 9-12 for Mathematics from 1985-86 to 1988-89?



* Grade 9 show consistently negative NCE gains.

* Grades 10-11 show consistently positive NCE gains.

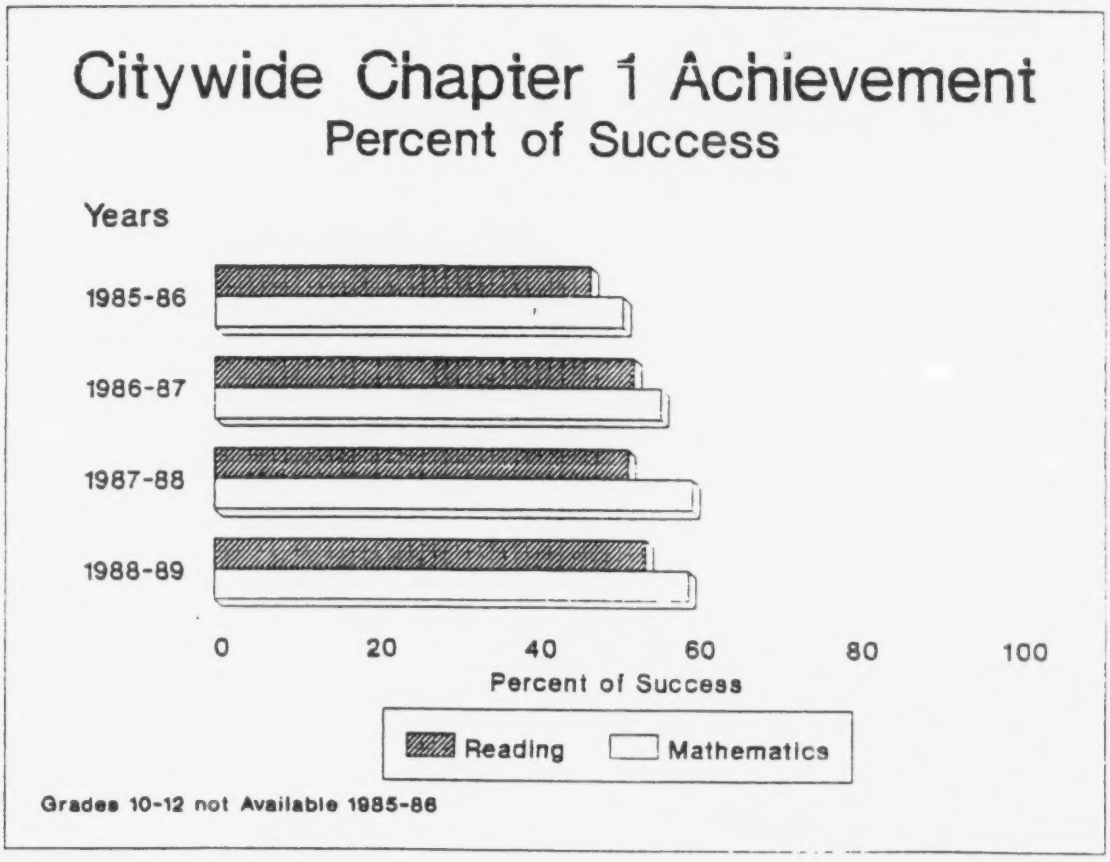
* Caution must be exercised in the interpretation of these patterns since the number of students with complete test data is relatively small.

What were the Citywide Chapter 1 Percent of Success Achievement Patterns in Reading and Mathematics from 1985-86 to 1988-89?

Name of Indicator: Percent of Success

Description of Indicator:

The percentage of students whose posttest NCE exceeds their pretest NCE. This indicator examines the norm reference impact in relation to the school district's Chapter 1 group as a whole.



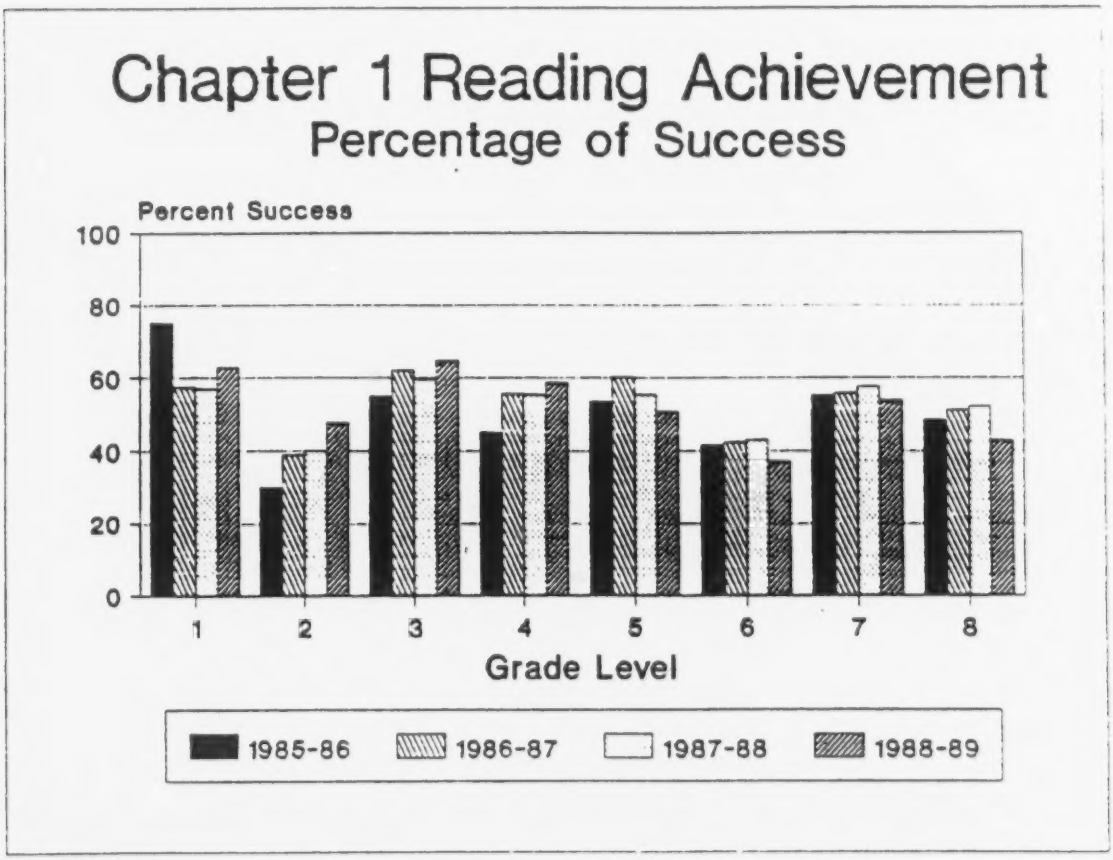
Comment:

* The Citywide patterns for the Percent of Success in reading and mathematics were positve between 1985-86 and 1988-89.

* The Citywide Percentage of Success was greater for mathematics than for reading.

* During the four year period, the Citywide Percentage of Success went from 47% to 54% in reading and from 51% to 59% in Mathematics.

What were the Chapter 1 Percent of Success Achievement Patterns in Grades 1-8 for Reading from 1985-86 to 1988-89?



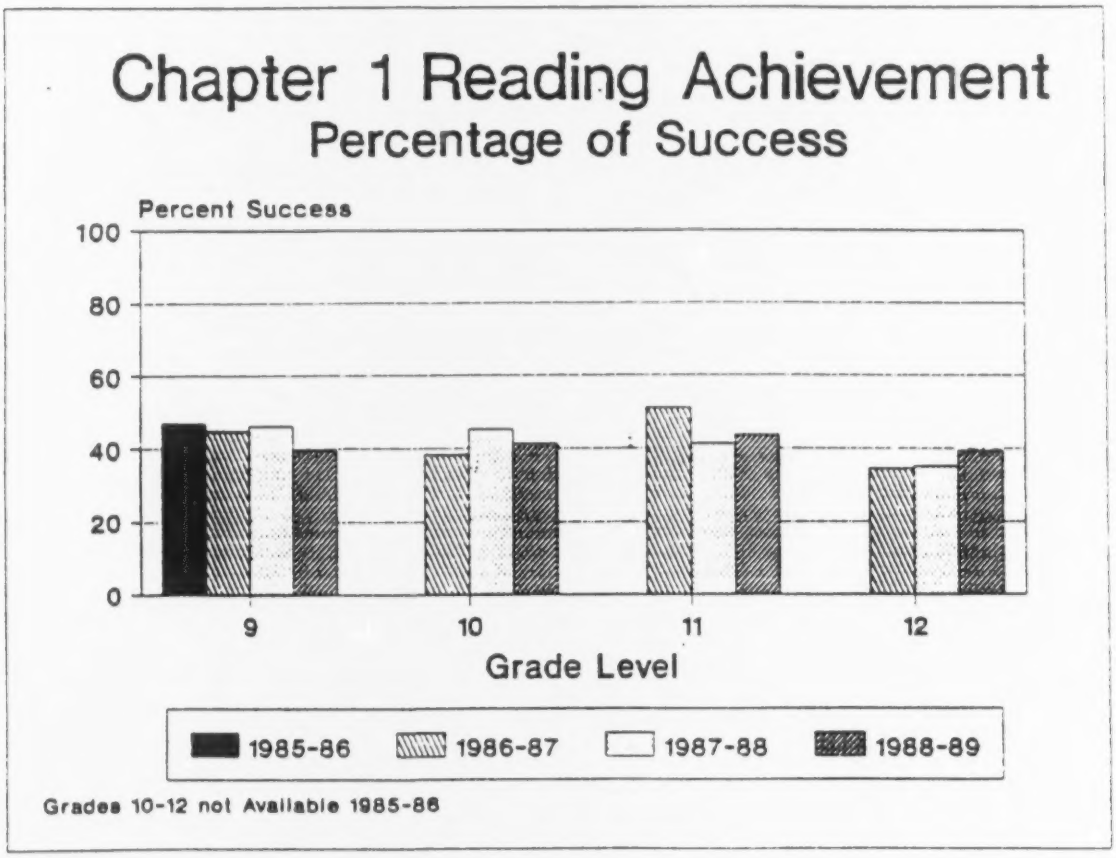
* Grades 1- 4 have shown an increasing percentage of success during the past two years

* Grades 5-8 have shown a decreasing percentage of success during the past two years

COMMENT:

The data suggests that this indicator ought to be monitored in order to determine if this trend persists and if it is possibly related to the middle school reorganization.

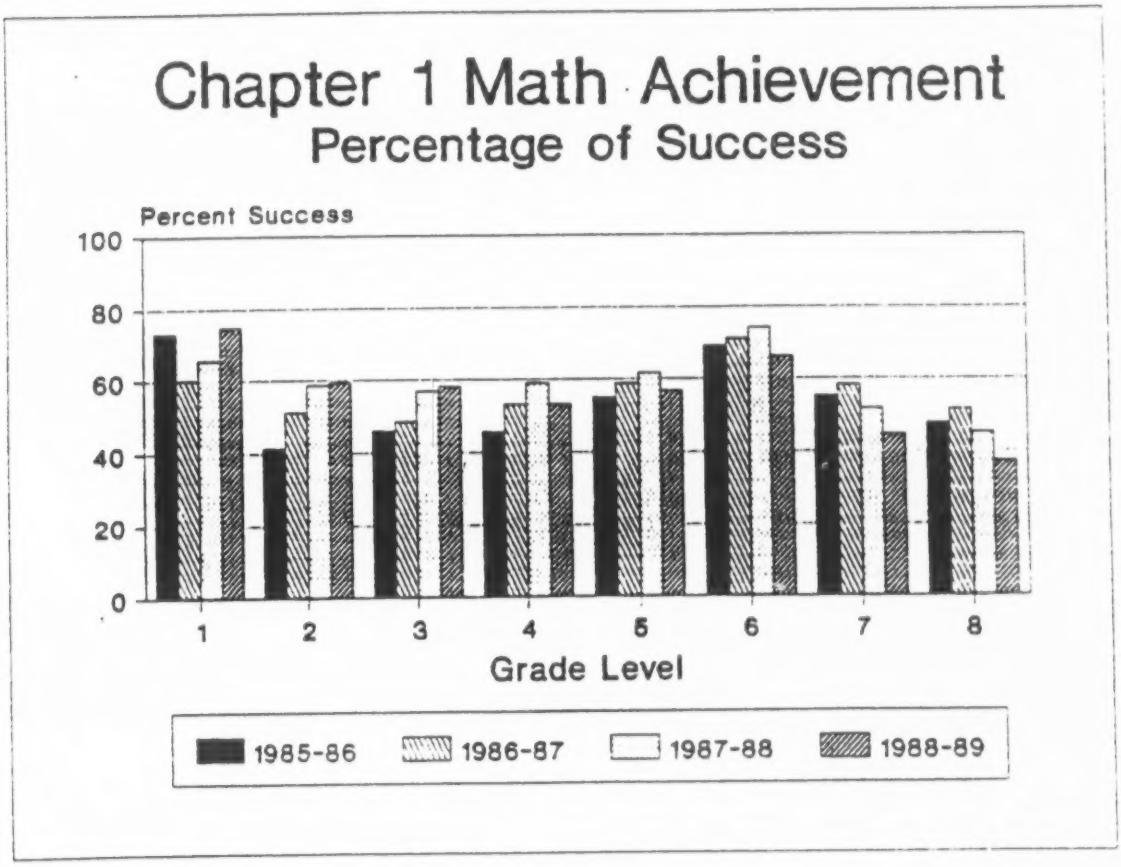
What were the Chapter 1 Percent of Success Achievement Patterns in Grades 9-12 for Reading from 1985-86 to 1988-89?



* Grades 9-12 are consistently below the 50% mark for percent of success.

* The indicator is rather stable and reflect little progress.

What were the Chapter 1 Percent of Success Achievement Patterns in Grades 1-8 for Mathematics from 1985-86 to 1988-89?



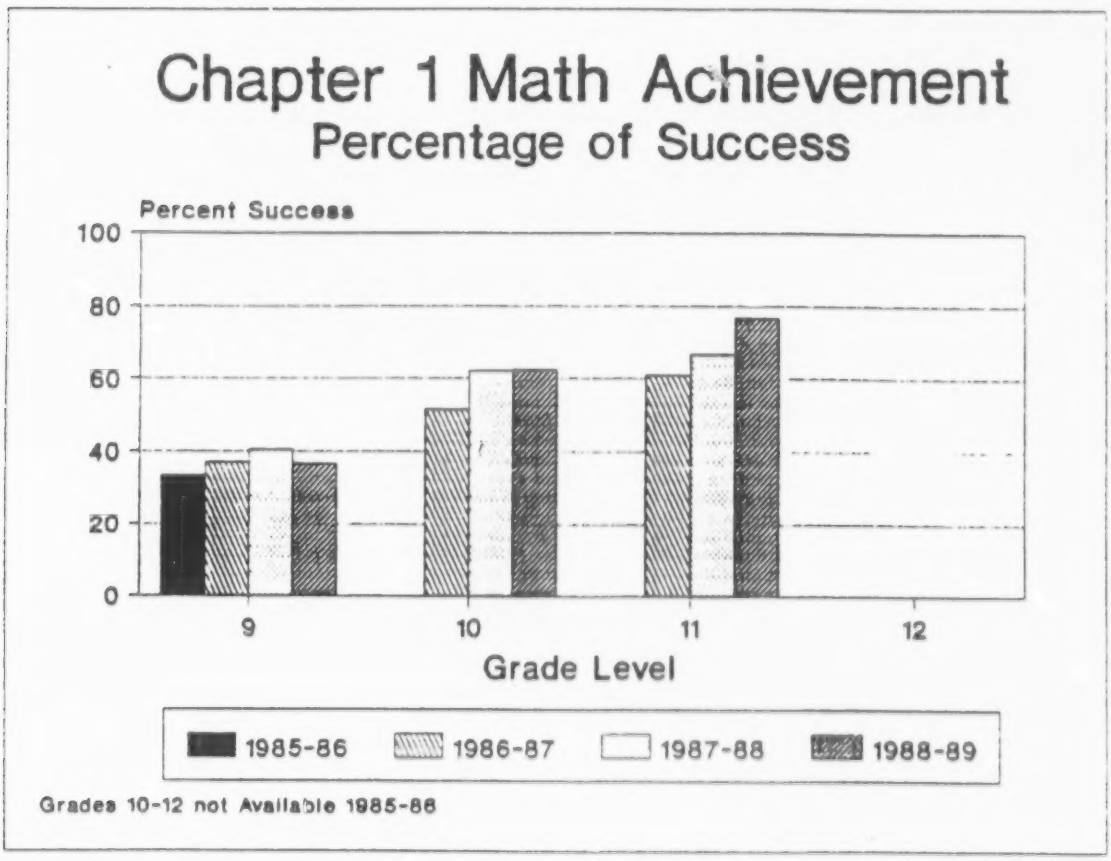
* Grades 1-3 have shown an increasing percentage of success during the past two years.

* Grades 4-8 have shown a decreasing percentage of success during the past two years.

COMMENT:

The data suggests that this indicator ought to be monitored in order to determine if this trend persists and if it is possibly related to the middle school reorganization.

What were the Chapter 1 Percent of Success achievement Patterns in Grades 9-12 for Mathematics from 1985-86 to 1988-89?



* Grades 10-11 show a consistent positive pattern.

* The number of students whose posttest score is higher than their pretest score has increased each year.

* Caution must be exercised in the interpretation of these patterns since the number of students with complete test data is relatively small.

What conclusions may be drawn from the Achievement Indicators?

* From 1985-1989, the improvement in Mathematics has exceeded the improvement in Reading.

* For each service area, achievement in the lower grades tended to be better than achievement in the upper grades.

* In grade 2 reading, the Percent of Success has increased each year despite the fact that the NCE change was consistently negative. Thus, even though greater numbers of students are attaining higher posttest scores, it is not enough to produce a positive change in the NCE.

* Grade 6 reading appears to require strengthening. Both indicators reveal negative patterns.

* In mathematics, the positive patterns found in the lower grades are not sustained. Negative changes in recent cycles are evident in grades 7 and 8.

* For both reading and mathematics, over the past two years, a decrease in the Percent of Success has been observed in the middle years.

* During the four year period, 1985-1989, Citywide Chapter 1 achievement in both reading and mathematics has improved. This achievement is reflected in both indicators-NCE change and the Percent of Success.

How can one determine if the achievement of Chapter 1 students is up to standards over time?

Assumptions:

* Chapter 1 is a part of and is supplementary to the larger picture of student achievement within the total District.

* Gain matters little if the resulting achievement is continuously below grade level performance.

* Positive achievement should enable students to be promoted regularly and complete high school.

* Mastery of Philadelphia's Standard Curriculum underlies the successful completion of the District's educational program.

Standardized Curriculum Support Indicator (SCSI)

The SCSI determines the achievement gap in grades 1-8 between Chapter 1 and Non-Chapter 1 schools in each curriculum area. It is computed by dividing the percent correct from the Citywide Tests' curriculum referenced items in Chapter 1 schools by the percent correct in Non-Chapter 1 schools and subtracting the difference from 1. The baseline percent correct in Non-Chapter 1 schools is held constant until the ratio when measured in subsequent years ecuals 1 thus demonstrating that the gap has been closed. At that time a new baseline year is selected.

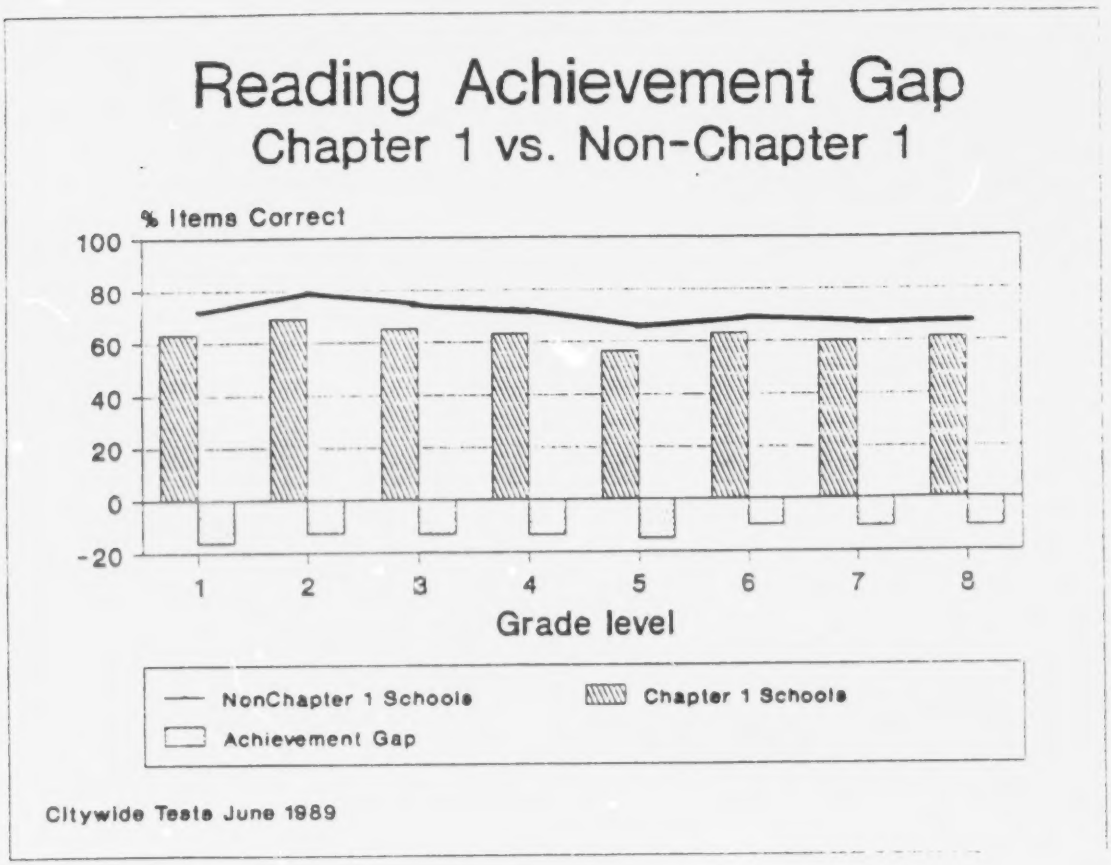
Example:

On the grade 5 reading test, Non-Chaper 1 schools averaged 66.5% correct while the Chapter 1 schools attained 56.5% correct. The result of 56.5 divided by 66.5 = 89.5%. This means that on the average, grade 5 children in Chapter 1 schools are demonstrating nearly ninety percent of mastery of their more advantaged peers. If one subtracts 89.5% from 100% one could say that a 10.5% achievement gap exists between the groups.

Comment:

The baseline for this indicator is the June 1989 Citywide Tests. The information is displayed on pages 23 to 26. Determination of the degree to which the gap is closing will begin with the June 1990 testing cycle.

What is the baseline achievement gap in reading?

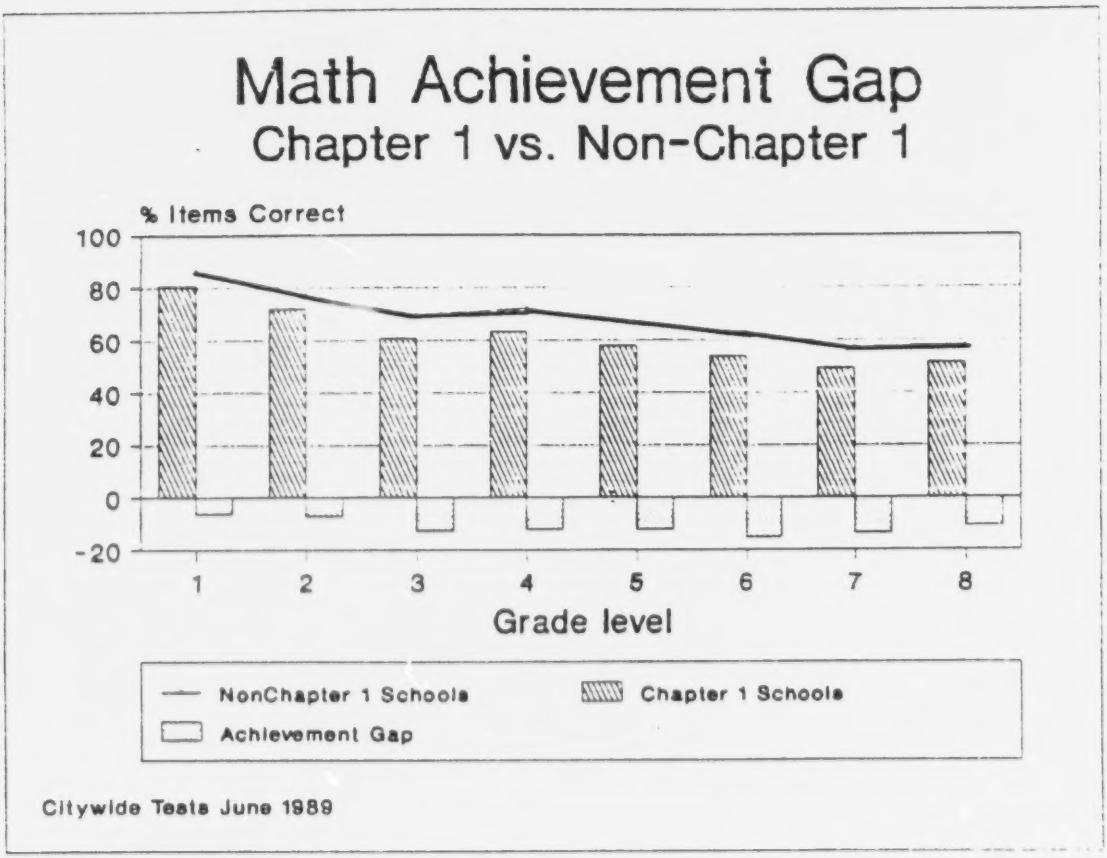


* The gap ranges from 9.8% in grade 6 to 16.3% in grade 1.

* The largest gaps occurred in grade 1 and grade 5.

* For grades 1-8 there is a slight but continuous decrease in the percent correct in both Chapter 1 and non-Chapter 1 schools.

What is the baseline achievement gap in mathematics?

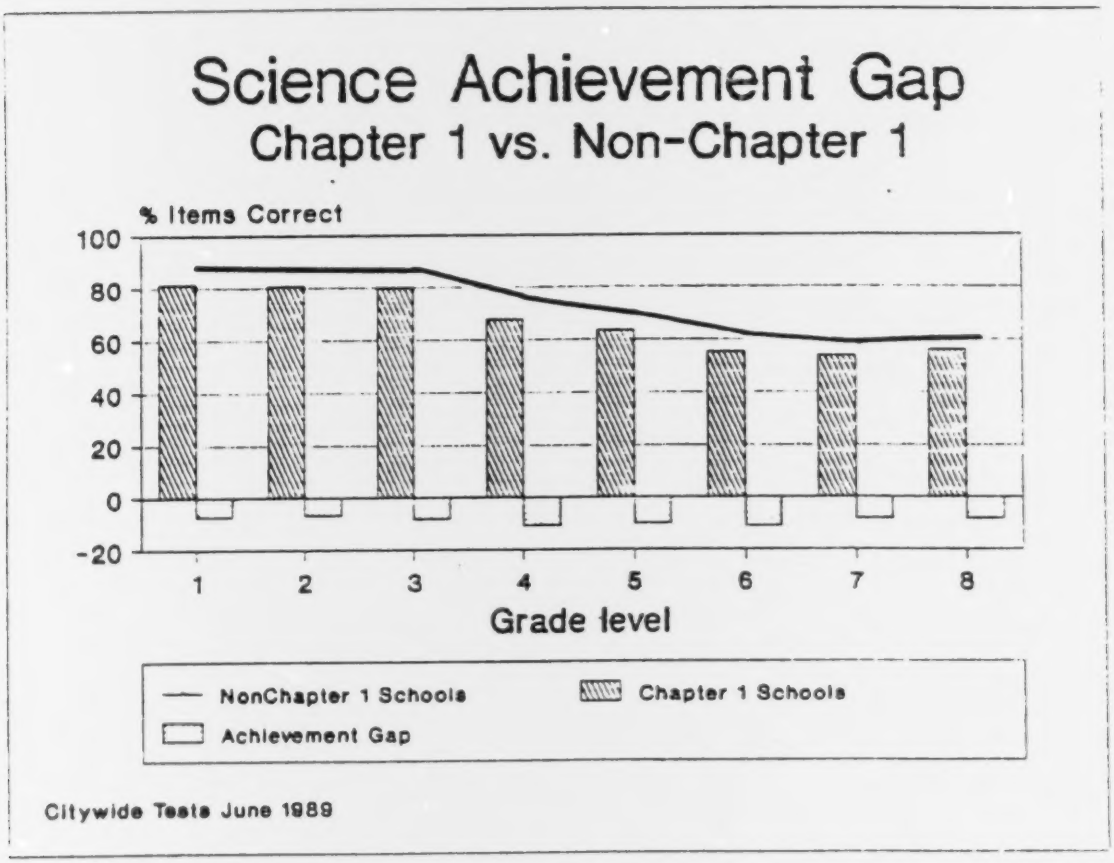


* The gap ranges from 5.9% in grade 1 to 14.8% in grade 6.

* The largest gaps occurred in grade 6 and grade 7.

* For grades 1-8 there is a slight but continuous decrease in the percent correct in both Chapter 1 non-Chapter 1 schools.

What is the baseline achievement gap in Science?



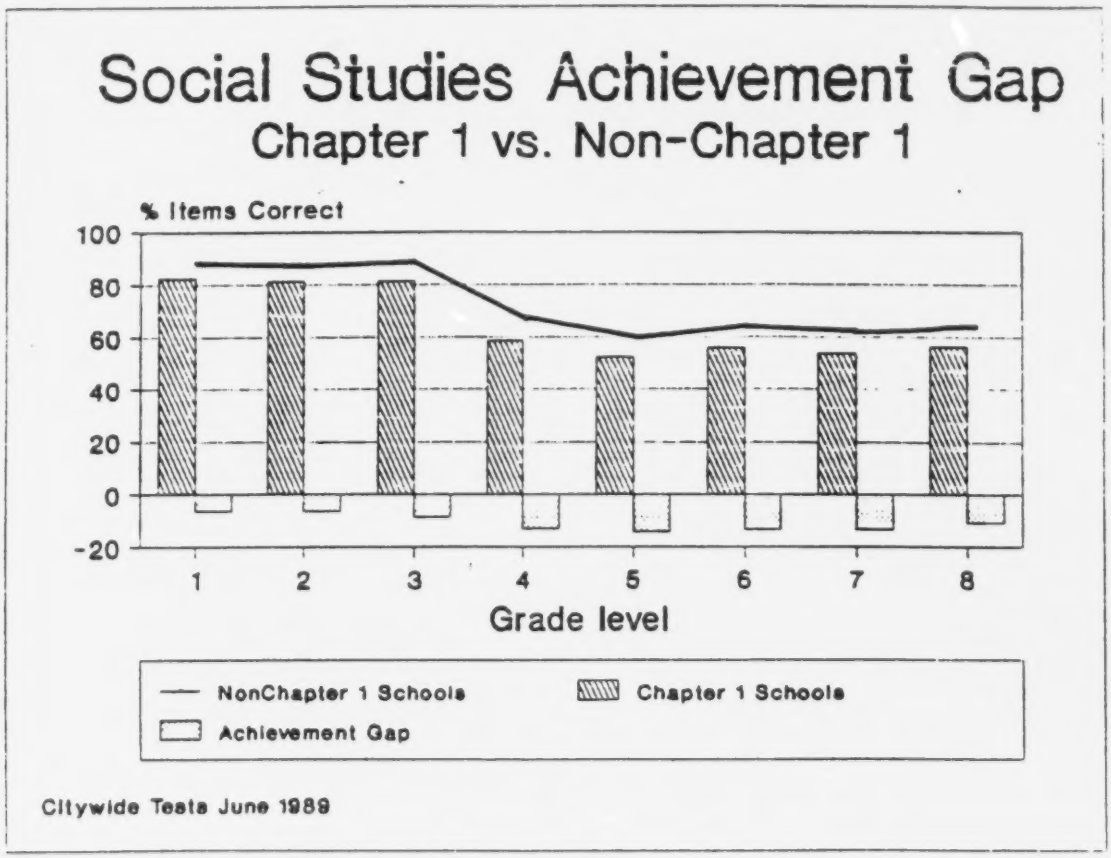
* The gap ranges from 6.6% in grade 2 to 11.2% in grade 6.

* The largest gap occurred in grade 6.

* The increased gap from grade 3 to grade 4 is most likely due to the change in measuring device from checklist to multiple choice test.

* For grades 4-8, there is a slight but continuous decrease in the percent correct in both Chapter 1 and non-Chapter 1 schools.

What is the baseline achievement gap in Social Studies?



* The gap ranges from 6.2 in grade 2 to 14.0% in grade 5.

* The largest gap occurred in grade 5.

* the increased gap from grade 3 to grade 4 is most likely do to the change in measuring device from checklist to multiple choice test.

* For grades 4-8 there is a slight but continuous decrease in the percent correct in both Chapter 1 and non-Chapter 1 schools.

How do Chapter 1 and non-Chapter 1 students compare with respect to age-grade placement?

Name of Indicator: Age-Grade Appropriate (AGA)**

Description of Indicator:

The AGA Indicator is a measure of the degree to which a student's chronological age is consistent with the expected age associated with grade-level placement. Since AGA is related to promotion/retention and graduation it offers a quick overview of students as they move through the regular school program.

PERCENT OF 1987-1988 ACTIVE STUDENTS
MORE THAN 1.1 YEARS BEHIND

Grade Level	Schools: Chapter 1 Served	Chapter 1 Not Served	Non-Chapter 1 Served(a)	Non-Chapter 1 Not Served
	(N=55746)	(N=35340)	(N=8667)	(N=74062)
1	18.0	3.1	20.6	3.4
2	15.8	8.1	17.3	6.0
3	18.2	15.6	19.6	8.0
4	22.3	16.8	21.8	10.1
5	22.6	14.8	17.7	8.9
6	21.9	15.7	18.7	11.6
7	28.9	27.4	16.4	13.1
8	34.5	29.8	17.5	14.4
9	49.1	42.1	35.9	27.5
10	46.3	39.6	25.7	22.0
11	31.4	32.9	14.0	13.8
12	23.3	24.3	24.7	10.0

(a) NOTE: Those who received Chapter 1 service and then transferred to a non-Chapter 1 school.

COMMENT:

* Chapter 1 served students in Chapter 1 schools are most likely to be behind in grade-level placement.
* Students NOT served by Chapter 1 are most likely to be in the in the appropriate grade-level placement
* These relationships held for former Chapter 1 students attending non-Chapter 1 schools

**NOTE: This Indicator was developed by Drs. William Yancey and Ira Goldstein of Temple University.

What are the common patterns of exiting and reentering for program participants?

Name of Indicator: Exit and Return Rate Indicator

Description of Indicator:

The Exit Indicator measures the percentage of served students whose posttest national percentile rank (NPR) exceeds the NPR established for eligibility. The Return Rate Indicator is the percentage of former Chapter 1 participants who become eligible for service as a result of the next testing cycle following their exit from the program. Those who remain in the program are also considered; they include students who were below the cut score in the spring. In order to monitor this indicator in future cycles, the data are displayed using the September 1, 1989 cut-scores (i.e., Below 41st NPR grades 1-4 and Below 26st NPR grades 5-12).

EXIT AND RETURN RATE INDICATORS FOR BASIC SKILLS
SPRING TO FALL 1987 and 1988

Basic Skills Services	Chapter 1 Programmatic Outcomes 1987 Remained	1987 Exited	1987 Exited Students who Reentered	1988 Remained	1988 Exited	1988 Exited Students who Reentered
Reading	58.3%	41.7%	45.4%	55.1%	44.9%	40.8%
Mathematics	44.2%	55.8%	38.6%	41.9%	57.9%	36.9%

* In reading, more students remain in and fewer student exit from the program in comparison to mathematics.

* More than 55% of those served in reading and more than 40% of those served in mathematics remain eligible for continued Chapter 1 service.

* More than one-third of those who exit each service, are eligible to reenter the Chapter 1 program by the next testing cycle.

* During the past two years, for both reading and mathematics, the exit rate has increased, the return rate has decreased and those remaining in the program have decreased.

What conclusions and recommendations emerge from this study?

Conclusions:

* Educational Indicator provide valuable insights by tracking trends and outcomes that extend for more than a single year.

* Variations in services by type and number appear to be related to the restructuring of the Chapter 1 Program over time.

* Over the years, Citywide patterns of standardized test achievement for Chapter 1 participants were positive.

Recommendations:

* There are 2 recommended follow-up studies which should be given high priority since they could provide policy relevant information on resource allocation and expenditures:

  - Success in the regular classroom program
  - Exit and return rates of Chapter 1 participants